ABSTRACT

A stable resonator for solid-state lasers which exhibit a thermally induced lensing effect, includes a laser rod, a rear mirror and a semi-reflecting output mirror. The invention is characterized in that the rear mirror has an extremely asymmetrical configuration, allowing the laser rod to move totally or almost totally toward the side of the output mirror. The laser rod is curved in a convex manner on one end in order to achieve a refractive effect, and a convex rear mirror is provided. As a result of the extreme asymmetry, the resonator has a beam quality as a function of the pump power with a comparably flat maximum even at relatively short resonator lengths in contrast to the state of the art. The effects of the thermal lens have practically no influence on processing results. Starting pulse behavior lies below the detection limit.